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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,842	01/11/2006	Jia-Ni Chu	W9643-02	3234

7590 01/04/2008  
Willam D Bunch  
W R Grace & Company Conn  
Patent Department  
7500 Grace Drive  
Columbia, MD 21044-4098

EXAMINER
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MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
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1793

MAIL DATE	DELIVERY MODE
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01/04/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,842	<b>Applicant(s)</b> CHU ET AL.	
	<b>Examiner</b> Michael A. Marcheschi	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10/17/07.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 11-14 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-14 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/17/07 has been entered.

Claims 1-7, 11-14 and 17-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over (1) WO 01/98201 or (2) 6,527,817 (Fang et al.).

The WO reference teaches in the abstract and on page 2, line 29-page 4, line 9, a polishing composition and polishing method, said composition comprises abrasive particles (colloidal silica) having a poly dispersed particle size distribution and water. The standard deviation of the particles is also defined.

Fang et al. teaches in the abstract and column 2, line 62-column 4, line 2, a polishing composition and polishing method, said composition comprises 10-95 weight percent, based on the solids of abrasive particles (colloidal silica), wherein the abrasive particles have a poly dispersed particle size distribution and water. The standard deviation of the particles is also defined.

All of the references teach polishing compositions and polishing method, wherein the polishing composition comprises abrasive particles (colloidal silica) having a poly dispersed

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particle sizes distribution (size less than 100 nm). The size values of the references read on the claimed size of 20-100 nanometers, thus the claimed size is anticipated by the reference. With respect to the claimed span value, although the limitation "span value" is not literally defined, the broad disclosure of (1) the standard deviation and (2) the breath of the reference distributions anticipate this limitation. With respect to the fraction of particles having the claimed maximum size (100 nm), all of the references teach abrasives which can have a size less than 100 nm, thus the reference do not have to have sizes over 100 nm and therefore the fraction of particles can be zero (within the claimed range of "less than").

In the alternative, no patentable distinction is seen to exist because the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Applicant's arguments filed 10/17/07 have been fully considered but they are not persuasive.

Before responding to applicants arguments, the rejections, as previously defined and used hereinabove, rejected the claims over two references, one being WO 01/98201 and the other being 6,527,817 (Fang et al.). It should be noted that the inventors of the WO reference is also Fang et al. Applicants present arguments over the Fang et al. reference but never clearly define which Fang et al. reference is being relied upon. From applicants arguments, which set forth that Fang et al. describes a polishing composition comprising fumed silica and another abrasive, it

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can be interpreted that applicants arguments pertain to the 6,527,817 (Fang et al.) since this is the only reference that requires fumed silica and another abrasive.

Applicants present arguments that the “distribution by number can be significantly different than the distribution by volume”. Although this may be true, applicants are not claiming a distribution by volume, all that is claimed is that particles having a size greater than about 100 nm is present in an amount of less than or equal to a certain percent by volume. This is not a clear distribution by volume. In addition, all of the references teach abrasive particles (colloidal silica in both references) which can have a size less than 100 nm, thus the references do not have to have sizes over 100 nm and therefore the fraction of particles can be zero (within the claimed range of “less than”). In addition, the size distribution of the references must contain a volume of sizes and burden is upon applicants to show clear evidence as to why the distribution of the references would not constitute particles in the claimed volume relationship.

It is the examiners position that from the data of the percentages for the individual abrasives, volume percents can be determined (depending on the size and density of the silica used which would appear to be the same), and this appears to encompass the claimed values. Applicants have not provided any clear evidence establishing that the claimed volume relationship is patentable over the number relationship of these references. Finally, the distribution of the references must have some volume associated therewith and applicants have not shown clear evidence as to why the distribution of the references will not meet the claimed volume limitation. Since all the particles of the references have the same size as the claimed invention, the volume must also be the same absent evidence to the contrary and since applicants do not define any numerical values for the volume.

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Applicants appear to argue that since the reference sizes are not in volume, they cannot anticipate the claims. This is not persuasive because the claims do not define the volume percentage of the particles in the defined range. It is the examiners position that since no percentage value is defined and since the references all teach the exact claimed particle size, a volume must inherently be associated therewith. The only specific volume percent value defined is for the particles above 100 nm and since the references are void of this size, the volume percent is zero which, reads on the claimed range.

Applicants also appear to argue that the examiner has not defined a prima facie case of obviousness because the reference size are not defined in terms of a volume. The examiner clearly stated why the claims are obvious, in the alternative rejections above, and thus burden is upon applicants to clearly show otherwise. A prima facie case of obviousness is established because it is the examiners position that since no percentage value is defined and since the references all teach the exact claimed particle sizes, a volume must be associated therewith. The only specific volume percent value defined is for the particles above 100 nm and since the references are void of this size, the volume percent is zero which, reads on the claimed range.

Applicants also present arguments that the “distribution span by number can be significantly different than the distribution span by volume”. Although this may be true, the claims, as amended and in view of the previous indefinite rejection, have canceled “by volume” thus applicants arguments are moot because this is no longer required.

Applicants also argue that Fang et al. (apparently referring to 6,527,817 (Fang et al.)) does not disclose the use of a single abrasive but rather employs fumed silica in addition to another abrasive (colloidal silica), thus the reference teaches away from the claimed invention.

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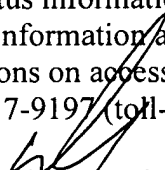
This is not persuasive because the instant claims use "comprising" which opens the claims to this component. Applicants also argue that this reference does not disclose a single abrasive (i.e. colloidal silica) having the specifications recited in the independent claims. This is not persuasive because the reference clearly teaches in column 3, lines 10-20 and lines 55-68 that the abrasive particles (these are the colloidal silica particles and not the fumed silica particles of the reference-this is apparent because the abstract differentiates between fumed silica and abrasive particles (i.e. fumed silica and abrasive particles)) have a poly disperse distribution meeting the claimed size requirements. In view of this, when the reference refers to abrasive particles in the above passages, it is referring to the colloidal silica particles as is apparent from column 2, line 62+.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM



Michael A Marcheschi  
Primary Examiner  
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